

**Cigarette Consumption.** In 1971, Seltzer wrote a letter to the Editor (*N Engl J Med* 284: 1384-1385, 1971) commenting on the secular rise in death rate from heart disease paralleling the secular increase in cigarette consumption. This topic has been omitted from the 1972 Document. The response of Grannis (*N Engl J Med* 284: 1384-1385, 1971) is also reproduced.

#### CIGARETTES AND HEART DISEASE

**To the Editor:** It has been suggested that the secular rise in death rate from heart disease parallels the secular increase in cigarette consumption. In this connection, the recently published World Health Organization's data on the death rates from arteriosclerotic and degenerative heart disease for the age group 45 to 54 and for the years 1955 to 1967 are most interesting.

Table 1 gives in rank order the percentage changes in adult per capita cigarette consumption and the appropriate

Table 1. Death Rates from Arteriosclerotic Heart Disease in Relation to Smoking.

Country	Cigarette Consumption/Adult*	Death Rate from Arteriosclerotic Heart Disease†
GRANNIS et al. (1967/1963)	CHANGES IN % (1967/1963)	CHANGES IN % (1967/1955)
Finland	-5	+30
UK	+13	+29
Netherlands	+17	+23
US	+18	+1
France	+33	+39
Switzerland	+38	+10
Sweden	+39	+10
Italy	+46	+13
Canada	+47	+8
Japan	+48	-27
Australia	+51	+28
Austria	+55	+32
W. Germany	+500	+20

\*Tobacco Consumption in Various Countries. Second edition. Edited by DH Bass. London: Tobacco Research Council (Research Paper 6), 1970.

†Manton F: The modern epidemic: ischemic heart disease. World Health, August-September, 1970, pp 3-11.

†Based on 1960 cigarette & death-rate figures from arteriosclerotic heart disease since 1947 tobacco figures have not been available.

death rates from arteriosclerotic heart disease for the countries listed by WHO from 1955 to 1967. From this table, it appears that there is no rank-order association between cigarette consumption and death rates from arteriosclerotic heart disease. In fact, among the five countries with the smallest changes in cigarette consumption, four countries (Finland, United Kingdom, Netherlands and France) show the largest percentage increases in heart-disease mortality. Similarly, Finland displays a 5 per cent decrease in per capita cigarette consumption, yet over the same period has experienced a 20 per cent increase in deaths from arteriosclerotic heart disease.

Of further interest is the fact that whereas Japan has had a 48 per cent increase in cigarette consumption, its death rate from arteriosclerotic heart disease over the same period has declined 27 per cent. West Germany, with a 30 per cent increase in cigarette consumption, shows only a 20 per cent increase in arteriosclerotic heart disease. For the United States the death rate from this cause is essentially unchanged, whereas our country has experienced an 18 per cent rise in per capita consumption. These data do not support the parallelism of secular changes in cigarette consumption and heart-disease mortality.

I do not draw any conclusions regarding the effect of cigarette smoking on heart-disease mortality from these figures, except to point out the danger of the use of secular changes in tobacco consumption and heart-disease mortality for this purpose. Obviously, the etiology of heart disease is far too complex for such simplistic interpretations from these kinds of statistical data.

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To the Editor: C. C. Seltzer, of the Harvard School of Public Health, recently tabulated data purporting to show a poor correlation of secular changes in cigarette consumption with heart disease mortality rates (*N Engl J Med* 284:1357, 1971). However, the kind of statistics used (percentage changes rather than absolute changes, and combined death rates of males and females rather than death rates of males) were inappropriate for establishing this nonparallelism, as Seltzer himself admits.

Seltzer emphasized apparent incongruities such as the disproportionate changes in the Netherlands and England as compared to changes in countries such as West Germany and Canada. Figure 1 shows that the changes observed in these and many other countries were in fact in good agreement with the relation previously established in epidemiologic studies.

The purpose of Seltzer's communication may have been to point out, correctly, that factors other than cigarette smoking are important in the etiology of heart disease, particularly among nonsmokers and in countries such as Japan, France, Switzerland and especially Finland. However, the tenor of his presentation discounted the major role of cigarette smoking in causing premature mortality of males, particularly in the United States.

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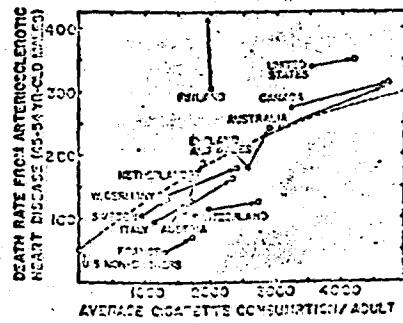


Figure 1. Average Cigarette Consumption per Adult per Year and Heart Disease Mortality (Men, 45 to 54 Years Old) Observed in Epidemiologic Studies of U.S. (1955-67) and in Various Countries in 1955 (O) and 1967 (□). The arrows show the changes that occurred in each country. The 13 per cent increase in cigarette consumption in the United States is shown in Figure 1 and shown in Figure 1 is artificial, being due to an increase in cigarette consumption of 18 per cent (18 per cent increase in cigarette consumption from heart disease, and his choice of statistics confused an otherwise clear situation).

Thus, I conclude that secular changes in heart disease mortality rates have indeed paralleled changes in cigarette consumption, confirming on a worldwide basis that cigarette smoking continues to be a major health problem that merits the concerned attention of national leadership.

The problem of cigarette smoking is serious because of the large increase in average longevity of smokers, the large number of smokers and the long period of involvement with smoking. The problem has been well documented at all levels of scientific inquiry, and serious socioeconomic disruptions of contemporary American society caused by smoking have been noted.<sup>1,2</sup> Nevertheless, national leadership has been unable to arrive at a meaningful solution to the problem, partly because of obfuscation of issues by specious statistical interpretations.

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